REMARKS

The Official Action has been reviewed, and the claims in the application are now claims 1-8 and 13-16. Favorable consideration is respectfully requested.

I. Amendments of claims

To satisfy the position of the Examiner as regards the written description requirement, the applicants hereby file a set of amended claims. The following amendments are made above:

Claim 1: In the phrase "A polyamide molding compound having a …", the term "comprising" is deleted and replaced by the term "having".

In the phrase "characterized in that the mineral filler, before it is added to the polyamide, consists essentially of uncoated ultrafine chalk", the term "before it is added to the polyamide, consists essentially of" is deleted and replaced by the term "is".

The phrase ", the molding compound being substantially free of any other filler" is deleted.

The phrase "provided as precipitated ultrafine chalk" is deleted, the feature "precipitated"

thereof is moved to the term "is uncoated ultrafine chalk" one line above.

Claims 9-12: These claims are cancelled.

Claim 15: In the phrase "A polyamide molding compound comprising a partially crystalline polyamide", the term "comprising" is replaced by the term "having".

In the phrase "characterized in that the mineral filler when fed to the polyamide as uncoated ultrafine chalk", the term "as" is replaced by the term "is".

The phrase ", and wherein the molding compound is substantially free of any other filler" is deleted.

Claim 17: This claim is cancelled.

Claim 18: This claim is cancelled.

II. Compliance with the written description requirement

The Examiner insists that the description would not support the exclusion "the molding compound being substantially free of any other filler". To bring the pending claims in compliance with the Examiner's holding regarding the written description requirement, this phrase is deleted in the claims 1 and 15.

III. Unclarity: Coated vs. Uncoated

The Examiner rejects the pending claim 18 as being indefinite, insisting that a polyamide molding compound having chalk and polyamide would inherently have the polyamide coating the chalk. This would correspond to the argumentation the applicants have used for the olefin compound coating the chalk of Kumaki et al (Remarks of Reply filed 11/20/2008, page 11). Thus, the Examiner insists that the mineral filler could not be identified as uncoated under the applicants' own definition.

Here, the applicants respectfully but resolutely disagree. A person skilled in the art is well familiar with the technical effect of using a filler uncoated or coating a filler for a desired application. Accordingly, a person skilled in the art is aware of the necessity to clearly decide whether to use coated filler particles or having the filler particles uncoated. Utilizing a coated filler would adjust the mediated technical effect of the respective particles to the desired technical effect for the compound. Thus, a person skilled in the art would at no time equalize the technical effect for a compound of an uncoated filler to the technical effect of a coated filler.

To support the statement presented above, the applicants hereby file further evidence demonstrating the general knowledge and understanding of a skilled person with respect to coating of filler particles. This evidence is an extract of a standard textbook in the area of plastics, and well known in the art, including the U.S. ("Plastics Additives Handbook"; see second page of the respective pdf-file, indicating the distribution in the USA by Hanser Gardener Publications, Inc., Ohio, USA; published in 2001):

Referring first to page 902 of the standard textbook, it is stated that "*the effectiveness of a filler depends on its type, incorporation method, loading, and surface treatment.*"

On the same page it is further stated that "*improvements are achieved through applying a surface treatment on the filler, which generates either primary (matrix-filler) or secondary (coating-matrix), flexible, energy-absorbing bonds.*"

These passages clearly demonstrate that the surface treatment of filler particles is generally known to improve the effectiveness of that filler. Furthermore, the two general types of surface treatment are presented:

1. a surface treatment which results in the generation of bonds directly between the matrix and the filler (primary bonds), and

2. a surface treatment, such as a coating, which results in the generation of bonds between the matrix and the coating of the filler (secondary bonds).

Thus, it is within the general understanding of a skilled person that:

- coating of filler particle is a surface treatment, where another material is added as a coat to the surface of the filler;
- this coating or the additional material, respectively, provides a different - improved - chemical binding to the matrix when compared to the binding properties of the uncoated surface of the filler to the matrix; and
- therefore, a coated filler particle is clearly and inevitably to be distinguished in particular because of its technical effect (chemical and/or physical binding properties) from an uncoated (thus untreated) filler particle.

Consequently, in accordance with the general understanding of a skilled person, the matrix which holds the filler would never be considered to be a coating:

- the matrix is not an additional third material component on the surface of the filler particle, and
- the matrix can per definition not influence the binding properties between the filler and the matrix itself.

Thus, when referring to a matrix having uncoated filler particles, within the general understanding of the skilled person in the present art, uncoated filler particles are never "coated" by the matrix, either inherently or artificially defined, and also not when being added to the matrix or when being admixed to and embedded in the matrix.

On page 903 of such standard textbook, it is disclosed that as a basic principle when choosing a certain filler for a particular application, the filler must be compatible to the matrix, meaning that the filler must be readily wettable by the matrix. However, as the filler has various effects on the matrix properties, the choice should be made in view of the main effect needed, while calculating a possible need of treating the filler surface to adjust other characteristics of the resulting matrix.

From these passages it is clear that the skilled person clearly differentiates between coating and wetting, as each term refers to different technical features. Coating is the application of an additional material as a coat for influencing the binding properties of the surface of the filler particles to the matrix. Thus, coating rather influences the extent of wetting of the surface of filler particles by the matrix.

The teaching according to this textbook is completely in line with the teaching of the prior art cited by the Examiner:

Kumaki clearly discloses and teaches a surface treatment of the filler (e.g. page 4, line 2 to 22), thus, to further influence the binding properties of the filler surfaces to the matrix. In particular, Kumaki specifically discloses the pre-treatment of the filler with a coupling agent such as an isocyanate-based compound. Alternatively, Kumaki teaches to employ the integral-blend method, where "the pre-surface treatment of the filler is not performed, but the coupling agent is added when the filler and the polyamide resin are melted and kneaded." Also with this method, the binding properties of the filler surface are influenced by the surface treatment, simply not as a pre-treatment, but rather

simultaneously to the melting and kneading process by adding the coupling agent to the compound in the later process step.

In particular, Kumaki refers to Kaolin, which is in view of the present invention a disadvantageous filler and which therefore explicitly does not form part of the invention (page 8, lines 6 to 17 and table 1 of the present invention as published). Again, the treatment of filler with a coupling agent indeed is a coating of these filler particles, and mediates, as discussed above, different binding properties to the matrix. Thus, also in view of the applicants' own argumentation, an uncoated mineral filler according to the present invention is very well different from a surface-treated, coated filler according to Kumaki.

Also Takagi et al teach that for enhancing the affinity of the inorganic filler for the resin, surface treatment should be used. Thereby, interfacial bonding forces are enhanced (column 7, lines 54 to 57). Thus, Takagi et al also affirm the teaching of the textbook as discussed above and the previous argumentation of the applicants to clearly distinguish uncoated particles from coated particles.

On the pages 915, the textbook teaches that a typical surface treatment of $CaCO_3$ is the treatment with stearic acid.

Finally, on page 916, direct reference is made to precipitated $CaCO_3$ (PCC), which is typically surface-treated with fatty acids when used in polymer applications.

Thus, also this standard-textbook teaches the person skilled in the art to use a surface-treatment of precipitated $CaCO_3$ when used as a filler in a polymer matrix, teaching against the present invention, where uncoated, and untreated $CaCO_3$ is used as the mineral filler.

Indeed it was unexpected for a skilled person that the combination of the partially crystalline, partially aromatic polyamides with the uncoated, precipitated ultrafine chalk having the claimed average particle size would result in a molding compound which allows the production of molded articles having a high-gloss surface. Even further, the teaching of the prior art continuously teaches toward a surface treatment for improving the binding between the filler and the matrix, and therefore the prior art teaches against said combination of polyamide and uncoated, untreated chalk as claimed.

With the given argumentation and supporting evidence, the applicants are convinced that the rejection of the pending claim 18 based on the argumentation of the Examiner on page 2 and page 3 of the June 3, 2009, office action, are to be regarded as unjustified in view of the

teaching of the prior art and general understanding of the skilled person in the present art. Therefore, respectfully, all rejections of claims inherently based on the same argumentation of the Examiner are equally to be considered as being unjustified.

Withdrawal of the rejection under §112 is therefore respectfully requested.

IV. Non-Obviousness

The Examiner still cites the Umetsu et al citation as the closest prior art for the pending claims, and acknowledges that Umetsu et al neither disclose the special type of $CaCO_3$-particles nor having an average particle size of at most 100 nm. The Examiner then argues that the skilled person would look to the prior art to find a suitable calcium carbonate to provide impact strength to a composition comprising a polyamide.

Already at this point, the applicants respectfully disagree. Having the differences between Umetsu et al and the present invention as claimed, the problem to be solved would be to look for a polyamide molding compound having an alternative filler. Only with the knowledge of the teaching of the present invention, would a skilled person selectively look for a certain type of $CaCO_3$. However, this assumption is

regarded as an ex post facto view and clearly based on hindsight, i.e. having read applicants' specification. Without the knowledge of the subject matter of the present invention, the skilled person would not have the motivation or reason to a) concentrate specifically on chalk as mineral filler and b) to even select uncoated, untreated precipitated chalk.

Claims 1-4, 6, and 13-16 are rejected as being obvious in view of the combination of Umetsu et al with Takagi et al. The Examiner argues that Takagi et al would disclose that precipitated calcium carbonate is a type of calcium carbonate that can be advantageously used in polyamide molding compositions because it is in particulate form.

Again, the applicants resolutely but respectfully disagree. Takagi et al discloses a resin composition with various single components, such as a polyphenylene ether resin, a polyamide resin, an alkenylaromatic compound-conjugated diene copolymer, a compound having unsaturated group and polar group in combination within the same molecule, and an inorganic filler. The polyphenylene ether resin is dispersed into the polyamide resin, wherein the polyamide resin forms the continuous phase. The inorganic filler in turn is NOT dispersed into the polyamide resin, but instead is dispersed selectively into the polyphenylene ether resin

dispersed phase (see column 7, lines 10 to 17)! Thus, Takagi et al does not teach to the use of precipitated chalk in the polyamide of the compound. In consequence, different requirements are to be observed when embedding the filler particles in a matrix that is different from polyamide.

Furthermore, and as discussed above, Takagi et al discloses and teaches a surface-treatment of the inorganic filler with surface treating agents to enhance the affinity for the resin or the interfacial bonding force (see column 7, line 54 to column 8, line 5). Thus, starting from Umetsu et al, the skilled person would exactly NOT arrive at a polyamide composition having uncoated, precipitated ultrafine chalk according to the amended claim 1 when combining the teaching of Umetsu et al with the teaching of Takagi et al. In contrast, Takagi et al even teaches toward the surface treatment of the filler and thus against the present invention, where NO additional surface treatment of the precipitated chalk is applied.

It is important to note that in no part of the present application is there disclosed any surface treatment applied to the precipitated chalk. In contrast, the present description and the examples clearly disclose that the ultrafine chalk is uncoated, thus untreated.

Consequently, a chemical composition of Umetsu et al combined with Takagi et al would not be the same as claimed. The chalk in any such combination would be specifically dispersed in the polyphenylene ether resin, and not in the polyamide resin. Furthermore, Takagi et al teaches inorganic fillers with particularly modified surfaces, thus teaching fillers having intentionally modified and thus intentionally different properties compared to the fillers according to the present invention. Again, Takagi et al even teaches against the present invention.

To summarize, the applicants have given strong evidence that it is within the general knowledge of a skilled person to distinguish between a composition having uncoated precipitated chalk as the mineral filler, and a composition having coated precipitated chalk as the mineral filler. The coating is a well-known process intentionally applied to a filler for influencing the binding properties of the surface of these filler particles. Also the cited prior art teach surface treatments of fillers when used in polymer compounds, to improve the binding properties of the filler to the matrix.

Indeed, in view of the general understanding and the prior art, it was surprising to a skilled person that uncoated ultrafine chalk could be successfully used in a molding compound having a partially crystalline, partially aromatic

polyamide. Indeed, skilled persons would have expected achieving a badly dispersed molding compound having agglomerates. However and surprisingly, the resulting molding compound according to the present invention has excellent properties suitable for complying with the quality requirements set, for example, for reflectors for vehicle driving illuminators. Therefore, the amended claims as filed today are both novel and non-obvious over the cited prior art.

As the technical difference of uncoated fillers compared to coated fillers is perfectly clear to a person skilled in the art, it would not be acceptable for the applicants if the PTO would insist on maintaining its position that the application contains an inadequate disclosure and that there would be no teaching as to how to obtain the claimed properties with only the claimed ingredients! If indeed the PTO insists on maintaining this position, the applicants would have no option other than to consider filing an appeal against this position.

Withdrawal of the rejections and allowance are respectfully requested.

Applicants believe that all outstanding issues are addressed above in a manner that should lead to patentability of the present application. Favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

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